REMARKS

Claims 1-2 and 4-10 are pending. Claims 1, 9, and 10 have been amended. Support for the amendments are found in the Specification as filed at least on page 1, lines 7-10, page 2, lines 20-25, page 4, lines 11-18, page 5, lines 12-17, and page 6, lines 1-7. No new matter has been added. The rejections of the claims are respectfully traversed in light of the amendments and following remarks, and reconsideration is requested.

Rejection Under 35 U.S.C. § 103

DiRenzo in view of Onodera et al.

Claims 1-2, 4-6, and 9-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable by DiRenzo (U.S. Patent No. 3,599,326) in view of Onodera et al. (U.S. Patent No. 6,133,537 hereinafter "Onodera").

Applicant again submits that DiRenzo only discloses the following:

> [T]he present invention contemplates a method of manufacturing printed circuit boards of the type having a plurality of contact pins projecting from one side thereof, and which pins are adapted for use as wire wrap terminals connecting board-carried wiring to external circuits. The method includes selectively coating portions of the pins . . . with a material to which solder will not adhere to maintain the portions free of solder and in condition for making of wire wrap connections, followed by subjecting the boards and pins to a batch of molten solder to connect the pins to the circuits carried by the board. (DiRenzo, col.1, ll.36-47).
>
> Still another method for applying a solder resistant coating comprises electroplating a layer of silver about .000025 inch thick on the gold plated pin to within about one-sixteenth inch of the solder pad. Again this leaves an exposed region of gold to which the solder will adhere. The assembly is then subjected to a hydrogen sulfide enriched atmosphere, whereby the silver coating is converted to silver sulfide which will reject solder during the wave soldering operation. (DiRenzo, col.3, ll.22-29) (emphasis added).

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Thus, DiRenzo only discloses an arrangement for preventing adherence of molten solder onto portions of pins that project from a printed circuit board when the circuit board is immersed or placed over a solder bath. Gold plated pins are disclosed as being selectively electroplated with a layer of silver which is converted to a coating of silver sulfide which is resistant to solder. Portions of the pins not selectively electroplated with the layer of silver is connected to the board circuits by the molten solder and should be able to adhere to solder. Accordingly, DiRenzo only discloses a composite of two layers, a layer of silver sulfide over a layer of gold. DiRenzo does not disclose or suggest a single layer essentially consisting of "gold containing a small amount of silver" or "an alloy of gold added with silver" or "a homogeneous mixture of gold added with silver" formed over a conductive contact part of said conductive contact member, as recited in independent Claims 1, 9, and 10, respectively.

Furthermore, DiRenzo does not disclose or suggest the prevention of adhesion resulting from contact with solid solder, nor the establishing of a temporary electric contact, nor the application of a resilient force. Instead DiRenzo discloses contact with molten solder and a permanent electrical contact with wire wrap connections or members of conductive material.

Although the Examiner admits that "DiRenzo lacks . . . the layer essentially consisting of 1) gold containing a small amount of silver/ or 2) an alloy of gold added with silver/ or 3) homogeneous mixture of gold added with silver," the Examiner states that "it would have been obvious to one having ordinary skill in the art at the time the invention was made and for the same reason to use AuAg(Pd) alloy, as taught by Onodera et al., in structure of DiRenzo."

However, Onodera teaches away from the use of a gold/silver alloy. Onodera discloses the following:

> Au and AuAg are so soft as showing a plastic deformation. This plastic deformation may cause a possible adhesion of the contact surface with an opposite contact surface. The adhesion of the contact surface with the opposite contact surface may cause the loss of reliability.
>
> A development of the contact surface layer material having an anti-adhesion property has been made. . . . 1-10% by weight of Pd and 10-100 ppm of C are added to Au or the AuAg alloy to prepare the

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> contact surface layer material, so that the electric contact superior in anti-adhesion property and contact stability is obtained. (Onodera, col.1, ll.30-45).

Thus, Onodera discloses the use of a gold/silver/palladium alloy for a contact surface layer material in contacts suitable for switches and relays, and does not disclose or suggest a layer essentially consisting of gold and silver suitable for conductive contact members used in contact probes and for electrical testing.

Furthermore, Onodera does not remedy the deficiencies of DiRenzo noted above with regard to the lack of disclosure for the prevention of adhesion from solid solder, the permanent nature of the electric contact, and the absence of a resilient force.

Akram et al. in view of Onodera et al.

Claims 1, 9, and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Akram et al. (U.S. Pat. No. 6,426,642 hereinafter "Akram") in view of Onodera.

Akram discloses the "formation of an insert for receiving and testing a . . . chip-scale-packaged microelectronic device having an array of outwardly projecting contacts, e.g., of a ball-grid-array or bump-grid-array (BGA). Such insert may also be known by other terms such as, for example, interconnect, interposer, socket, BGA test socket, or silicon insert." (Akram, col.4, ll.52-58). Such an insert includes a plurality of pockets 16 for receiving the solder balls of the device to be tested. *See* Akram, Figs. 14 and 29. The solder balls are heated to a reflow temperature at which the solder melts or otherwise reshapes itself so as to conform to the shape of the pocket. (Akram, col.11, ll.55-61). The lining for such pockets are required to be electroconductive and resistant to adhesion of solder at the same time.

Akram further discloses:

> [A] first conductive material 62 is formed conformably over . . . the walls of pockets 16. In an exemplary embodiment, conductive material 62 . . . comprises metal wetable by solder. Preferably, conductive layer 62 comprises copper . . . . Alternative metals for conductive material 62 include gold, palladium, nickel, chromium, or alloys thereof.

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> After forming conductive material 62, second conductive material 64 is formed over first conductive material 62 . . . . The second conductive material comprises material different from the first conductive material 62 and is selected to resist bonding to solder. In certain exemplary embodiments, second conductive material 64 comprises a metal such as tungsten, titanium, platinum, titanium nitride or titanium-tungsten. (Akram, col. 10, ll.36-53) (emphasis added).

Thus, Akram only discloses a composite of two layers: a second conductive material 64 selected to resist bonding to solder and that is different from gold or alloys thereof and which is formed over a first conductive material 62 wetable by solder.

Accordingly, Akram does not disclose or suggest a single layer essentially consisting of "gold containing a small amount of silver" or "an alloy of gold added with silver" or "a homogeneous mixture of gold added with silver" formed over a conductive contact part of said conductive contact member, as recited in independent Claims 1, 9, and 10, respectively.

Furthermore, Akram does not disclose or suggest the prevention of adhesion resulting from contact with solid solder, nor the applying of a resilient force. Instead Akram discloses contact with flowing solder.

For the same reasons as provided above, Onodera teaches away from the use of a gold/silver alloy and does not remedy the deficiencies of Akram noted above with regard to the lack of disclosure for the prevention of adhesion from solid solder, and the absence of a resilient force.

In contrast to the cited references above, Claim 1 recites a "conductive contact member for establishing a temporary electric contact by being applied under a resilient force to an object to be contacted that includes solid solder, comprising a layer of highly electrically conductive material resistant to solder deposition and essentially consisting of gold containing a small amount of silver."

Similarly in contrast, Claim 9 recites a "conductive contact member of a contact probe for establishing a temporary electric contact by being applied under a resilient force to an object to be contacted that includes solid solder, comprising a layer of highly electrically

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conductive material resistant to solder deposition and essentially consisting of an alloy of gold added with silver."

Similarly in contrast, Claim 10 recites a "conductive contact member of a contact probe for establishing a temporary electric contact by being applied under a resilient force to an object to be contacted that includes solid solder, comprising a layer of highly electrically conductive material resistant to solder deposition and essentially consisting of a homogeneous mixture of gold added with silver."

Therefore, because the references of record, alone or in combination, do not disclose or suggest all the limitations of Claims 1, 9, and 10, Claims 1, 9, and 10 are patentable over the cited references, alone or in combination.

Claims 2 and 4-8 are dependent on Claim 1 and contain additional limitations that further distinguish them from DiRenzo, Akram, and Onodera, alone or in combination. Therefore, Claims 2 and 4-8 are allowable over the cited references for at least the same reasons provided above with respect to Claim 1.

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CONCLUSION

For the above reasons, Applicant believes pending Claims 1-2 and 4-10 are now in condition for allowance and allowance of the Application is hereby solicited. If the Examiner has any questions or concerns, the Examiner is hereby requested to telephone Applicant's Attorney at (949) 752-7040.

Certification of Facsimile Transmission

I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Linda Bolter — June 21, 2004

Linda Bolter — Date of Signature

Respectfully submitted,

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